ARCH ROOF CONSTRUCTION CO. INC.

Engineers and Contractors
Long Span Roof Arches

104 WEST 42nd STREET, NEW YORK
PHONE WISCONSIN 5845

Mr. Pratt

DAVIDSON ARCH ROOF, PATENTED, JAN. 15, 1924
Other Patents Pending

A. I. A. file No. 131

Build this roof arch for

Have you counted the cost of pillars and posts?

YOU know the great strength and advantages of the arch principle of construction. Now—by using straight lengths of the usual structural materials—a practical way has been evolved of applying this principle to the economical construction of buildings having spans up to and over 200 feet where unobstructed space is desired. The disadvantages of the "pillar to post" type of building are entirely eliminated.

It isn't the first cost of pillars, posts and trusses that is the most serious. Have you ever considered the expense of just one post or truss for a period of years? Of course there are the very important questions of lost light and obstructed ventilation which can never be accurately estimated—but take the matter of space alone, in an average long span building. Allow for clearance and space lost in front of the post and figure the interest on this unused ground. Include this sum with the original cost of the post or truss and you will find the amount quite staggering. And this takes no account of time lost and the inconvenience in using such a building.

Arch roof construction does away with this continued loss in operating a "pillar to post" building by giving entire use of all the space you build, free of trusses, and provides maximum light and ventilation. Buildings can be constructed of timber or steel and can be fireproofed or fire-retarded.

The tested building completed.

Columbia University Field Test

The supreme strength achieved by this construction was demonstrated in the sand loading test which was conducted by the Columbia University testing laboratory of New York for the benefit of all superintendents of buildings in New York City. A test load of 90 tons of sand was spread on the roof arch to the average depth of 19 inches, giving a load equivalent to 80 lbs. per square foot. The sand was placed on the roof November 10, 1925. On November 13 the Weather Bureau office recorded almost 2 inches of rain in 24 hours with wind velocities of 48 to 70 miles per hour. This subjected the open structure to the additional weight of the absorbed rain water and severe tortional and direct strains—all of which it withstood without any visible effects. On November 19 about 11.3 inches of sand was removed from the west half of the arch only, subjecting it to an unsymmetrical load which also made no effect on it. The structure without the sand was exposed to the weather until July, 1926 when it was incorporated in the building shown.

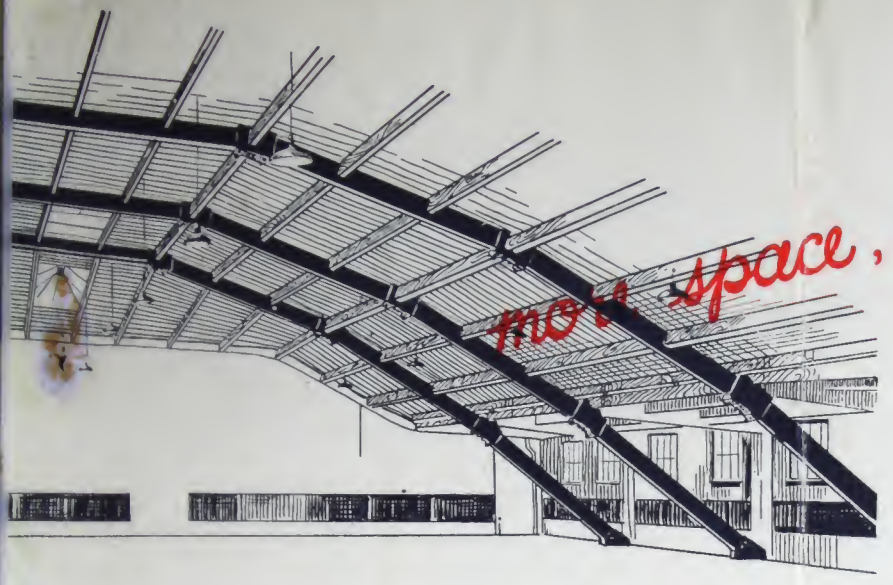
The photographs shown are of the High Arch Garage & Repair Co., Inc., Metropolitan Ave. and 127th Street, Richmond Hill, New York City. Columbia University tested the arch in this building. It may be inspected at any time and offers an opportunity for those interested to see the practical advantages of this type of roof construction.

Columbia University test, showing the roof weighted with sand, demonstrating the strength of the structure.

Public garages
Auditoriums

Convention Buildings
Exhibition buildings

Fair buildings
Warehouses



more space, daylight, economy!

Arch Roof Spans adaptable to Many Types

This Construction Offers

Maximum strength and long life, in spans to over 200 ft.

Economy of material and labor.

Full use of all floor space.

Unobstructed light and ventilation.

Temperature economically warm in winter — cool in summer.

Reduced fire hazards, ease of controlling fires and low insurance rates.

An added dignity, distinction and character to all long span buildings.

The arch roof span adapts itself to practically every type and style of construction and to buildings of all sizes. The diagrams on the right illustrate the adaptibility of this roof to different structures.

Engineering Service

We will be glad to cooperate with architects, engineers and contractors in planning the most economical and efficient design for particular buildings.

ARCH ROOF CONSTRUCTION CO.

INCORPORATED

104 West 42nd Street, N. Y.

TELEPHONE WISCONSIN 5845

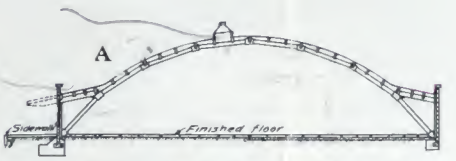
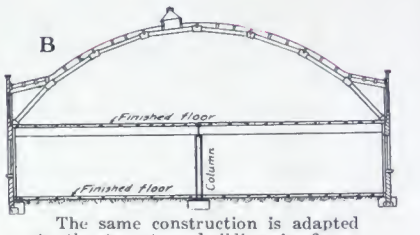


Figure "A" is the simplest type of construction for buildings where one story with clear floor space is desired. It can be erected at slight cost and can be built with or without sidewalk overhanging. The sidewalls can also be omitted and the building left open with doors, rolling shutters or canvas used for closing the sides in inclement weather. Buildings thus constructed have an unusually high salvage value.



The same construction is adapted to the two-story building in figure "B," giving an unobstructed top floor while the floor below has a minimum number of columns. Adaptable to any number of stories.

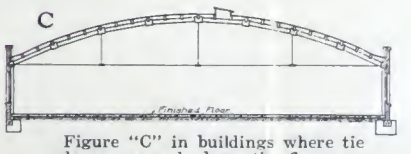
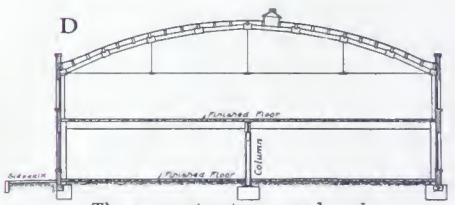


Figure "C" in buildings where tie rods across and above the floor are required this type offers the maximum light, air, and attractive appearance at a minimum cost.



The same structure can be adapted to two or more stories as in figure "D," giving a top floor entirely unobstructed with as many floors below as desired. A practical adaptation for larger, many-storied buildings.

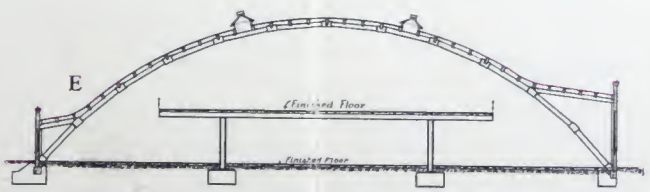


Figure "E" when conditions demand a building of very long span, and when it is desirable to use part of the space for a second floor, the arch span can be adapted to mezzanine construction (on sides, center or both) as in "E." Note that the wall may be either high or low—or high on one side and low on the other. The sidewalls can also be omitted from this type, leaving it open, or closed with canvas, rolling shutters or doors.

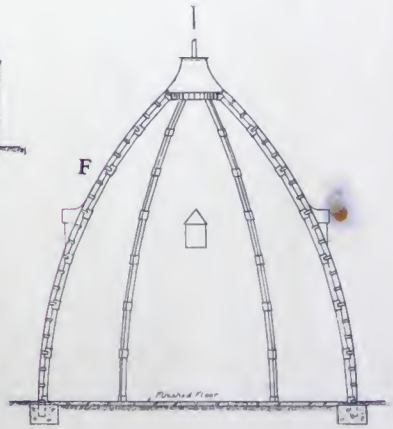


Figure "F" for buildings of interior Gothic architecture or dome construction the arch roof is ideal. The arch may be used as a dome as in figure "F" or in Gothic type when the ends of the arch may be finished flat. Adapted to the dignity of churches etc., but also to the economical construction of temporary buildings.

Theatres
Factories

Air plane hangars
Gymnasiums

Bowling alleys
Skating rinks

Queens County Motor Vehicle Dealers Association
Exhibition held October 2, to October 9, 1926,
at Metropolitan Avenue and 127th Street,
Richmond Hill, New York City

This building of arch roof construction permitted the free use of all space for exhibition purposes and provided a place large enough for the complete display of the annual motor show of the Queens County Motor Vehicle Dealers Association. It was the first time that a building, instead of a tent, was used and demonstrated the advantages and economy of this type of building without columns or trusses.